Aden

748
178 a few years ago there came into being the Protectorate Health Service which owes much to Dr. N.L. Corkill, M.M., M.S.M., M.D., who came with me to Al Qara. Health Units have been built on standardised lines in all the States where they did not previously exist; and from money contributed by the Fadli and Lower Yafa States, a hospital has been built on the boundary between these two States in a central, though rather wind-swept, position reasonably easy of access to the people of the Abiyan plain. In Mukalla there is another hospital and up in the Wadi Hadhramaut are two small hospitals at Shibam and Saiyun.

759 The Health Assistants are trained in simple medicine and hygiene at the Fadli-Yafa hospital or in Mukalla and then go to one of the Health Units where, not only do they attend to surgery patients, but also tour the neighbouring villages and are responsible for reporting any outbreak of an infectious disease that may come to their notice to their headquarters in Aden or Mukalla, depending on which part of the Protectorate they are serving.

744
164 Anti-malarial measures and Public Health work are also the responsibility of the Health Service and the decrease in the incidence of malaria and other mosquito and fly-borne diseases since the inception of the Service, is remarkable. At the same time and within the limits imposed by inadequate staff, attention is being paid to the general health of school children with particular emphasis on diseases of the eye. With adequate funds and personnel it would be possible if not to eliminate completely so to reduce trachoma that impaired vision and blindness from this cause would be a rarity rather than, as it still is today, all too common.

743
648 Today, as in the past, the Royal Air Force is always ready to fly Medical Officers into the Protectorate to deal with casualties in inter-tribal scrimmages or to attend to the desperately ill who are beyond the reach or the capacity of the Health Assistants, and there are many tribesmen and women who owe their lives to the Royal Air Force. Stretcher cases from the remotest areas are flown to hospital in Aden and no call for help is ever unanswered because the sender was too humble or

3-Gt. Brit. . Colonial Office G-3 (1938) 1940 MM1 Aden MM1

for the more serious cases which are transferred to the Civil Hospital. One Assistant Medical Officer is stationed on Perim Island where there is a small dispensary, with limited accommodation for in-patients.

The Keith Falconer South Arabia Mission has a large and well-equipped hospital at Sheikh Othman staffed normally by two European doctors and a European nursing staff. Other charitable institutions are two dispensaries, one maintained by public subscription with a Government subsidy and the other supported entirely by the prominent Parsi firm of Messrs. Cowasjee Dinshaw & Brothers.

The Royal Air Force hospital meets the medical requirements of the British Forces in Aden.

There are several dentists practising in the Colony, and the Royal Air Force has a fully qualified dentist, who is permitted private practice.

A total of 19,141 out-patients, and 2,366 in-patients received treatment during the year 1938 in the two Government hospitals, and, excluding the Royal Air Force hospital, but including other hospitals and dispensaries, a total of 67,694 out-patients and 3,872 in-patients were treated in the Colony during the year 1938 as compared with 60,069 and 3,206 in 1937.

The general health of Aden has remained satisfactory throughout the year. Many of the insect-borne diseases commonly found in tropical and subtropical countries are absent and, although a mild intestinal infection is very common, serious diseases such as typhoid fever and dysentery are rare. 1,292 cases of malaria were treated in the hospitals. From the investigation of the histories of these it was proved that all except 11 were due to infection acquired outside the Colony: all these cases were among service personnel resident in the leased military areas. The 12 cases of typhoid reported during the year show an increase on previous years, which is probably due to increased care taken in confirming the diagnosis of prolonged fevers. Minor outbreaks never assumed epidemic proportions, and in all cases water and milk supplies were examined and cleared from suspicion.

There is a leprosy hospital at Sheikh Othman supported partly by the Government of Aden and partly by Aden Settlement funds and administered medically by the staff of the Keith Falconer South Arabia Mission. Here again the Colony of Aden acts as the kind sister to her neighbours, as almost all the patients hail from the interior.

There has been no epidemic of major infectious or contagious diseases during the year. Chickenpox, measles and mumps crop up from time to time and are treated in the Infectious Diseases Hospital on Maala plain.

Brit., Colonial Office G-3 (1937) 1939 MM1 Aden MM1

The two Government hospitals are the European General at Steamer Point and the Civil Hospital in Crater. The nursing staff of these institutions is provided for from funds made available by the Government of the Colony and the Prince of Wales's Aden Nursing Association in the proportion of approximately half and half. The Prince of Wales's Aden Nursing Association is a charitable organization with invested funds raised originally by voluntary subscription, and the Association issue appeals to the public from time to time to supplement the amount of money available from interest on their investments. Two dispensaries in charge of Assistant Medical Officers at Maala and Sheikh Othman respectively cater for the minor ailments of the local population in these districts and serve as clearing stations for the more serious cases which are transferred to the Civil Hospital. One Assistant Medical Officer is stationed on Perim island, where there is a small dispensary with limited accommodation for in-patients.

The Keith Falconer South Arabia Mission have a large and well-equipped hospital at Sheikh Othman staffed normally by two European doctors and a European nursing staff, and other charitable institutions are two dispensaries, one maintained by public subscription with a Government subsidy and the other supported entirely by Messrs. Cowasjee Dinshaw and Brothers.

The Royal Air Force hospital meets the medical requirements of the British forces in Aden.

There are several dentists practising in the Colony, and the Royal Air Force have a fully-qualified dentist, who is permitted private practice.

A total of 16,636 out-patients and 2,213 in-patients received treatment during 1937 in the two Government hospitals, and excluding the Royal Air Force hospital, but including the other hospitals and dispensaries, a grand total of 60,069 out-patients and 3,206 in-patients were treated in the Colony.

The general health of Aden has remained satisfactory throughout the year. There is a pleasing absence of the many insect-borne diseases commonly found in tropical and sub-tropical countries, and although a mild intestinal infection is very common, the more serious disease, such as typhoid fever and the dysenteries are gratifyingly rare. A number of cases of malaria appear in the returns, but all of these are imported from the Protectorate or other places outside the Colony, not one single case having been contracted locally.

There is a leprosy hospital at Sheikh Othman, partly supported by the Government of Aden and partly by the Aden Settlement funds and administered medically by the staff of the Keith Falconer South Arabia Mission. Here again the Colony of Aden acts as the kind sister of her neighbours, since the great majority of the patients hail from the interior.

There has been no epidemic of the major infectious or contagious diseases during the year. Chickenpox, measles and

4:Gt. Brit., Colonial Office G-3 (1937) 1939 MM1 Aden MM1

mumps occur from time to time and are treated in the infectious diseases hospital on Maala plain.

A small lunatic asylum is situated outside the walls of the Civil Hospital and is administered from it.

The port health work is a very important feature in the medical and sanitary organization of the Colony. The proximity of Aden by sea to ports which are subject to periodic infections makes the careful inspection of vessels a vital matter, and in addition the services of the Port Health Officer are in constant demand to assist the masters of the many cargo ships carrying no doctor which use the port. Passengers and members of the crew requiring hospital treatment are accommodated in the European General Hospital or, if the illness is an infectious one, in suitable isolation. It is usual to have patients of four or five different nationalities, European and Eastern, in the wards at the same time, which is a compliment to the hospital and indicative of the service it renders to shipping, but tests very thoroughly the linguistic capabilities of the staff.

During 1937 2,274 bills of health were issued to mechanically-propelled vessels and 1,222 to native craft.

V.—HOUSING.

General.

Houses in Aden are of stone masonry, except at Sheikh Othman where mostly they are built with sun-dried bricks.

In every case particular attention is paid to efficient lighting and ventilation. Each residential quarter is provided with proper sanitary accommodation and kitchen which are suitably detached from the living-rooms by large and open court-yards or by large shafts open to the sky.

Most of the houses are provided with floors made of cement-concrete; this is insisted upon in all new proposals, and the height of the houses is never allowed to exceed the width of the streets.

Back-to-back houses are not allowed; a few still exist in the village of Maala, but these are being eradicated as opportunity occurs.

At the rear of all houses there are open spaces from 5 ft. to 10 ft. wide. They are called sweeper passages, and the sanitary accommodations abut on to these spaces and drain into them. Each such passage is connected with the main drainage system in all divisions of the Settlement except Maala, where it is connected with a big soak-away pit.

With these aims every building plan is carefully scrutinized by the Public Health Department before it is allowed to be constructed.

Most of the dwelling-houses within the Settlement limits are well ventilated and lighted and are satisfactory from a public health point of view. Endeavours are being made to effect an improvement in the architectural standard of the buildings.

5:Gt. Brit., Colonial Office G-3 (1947) 1949 MM1 Aden MM1

Causes of Deaths in 1947

Diseases	*Deaths*
Smallpox	—
Malaria	37
Enteric Fever	5
Other Fevers	223
Dysentery	16
Diarrhoea	265
Phthisis	244
Other Respiratory Diseases	240
Injuries	75
Deaths from child-birth	17
All other causes	701
Birth-rate	30·43
Death-rate: Crude	23·50
Actual	18·59

HOUSING

There are four types of housing in the Colony:

(*a*) Well-built bungalows or two-storeyed houses of European design, owned by Government or commercial firms and occupied chiefly by Government officials and the European mercantile community.

(*b*) Well-built multi-storeyed stone in lime-mortar structures, owned by the wealthier type of merchant, most of which are owner-occupied.

(*c*) Single- and two-storeyed buildings constructed of rubble stone jointed with mud (clay) mortar. Quite a number of these are also owner-occupied.

(*d*) Single-storeyed "mud brick" buildings. These are situated mostly in Sheikh Othman and many are owner-occupied.

All four types have flat timber roofs covered with lime concrete or rammed clay. Pitched roofs are rare, as the average annual rainfall is less than 2 inches, and the roofs are used for sleeping purposes during the hot season.

There is a fifth type constructed of reeds, palm leaves, branches of trees, corrugated iron, and known as *kutcha* dwellings. (*Kutcha* is a Hindustani word meaning "of poor construction".)

A slum clearance and rehousing scheme, whereby these *kutcha* huts were to be replaced gradually by mud-brick dwellings with proper sanitary arrangements, was begun under the aegis of the Aden Settlement in 1943, and this policy is being continued by Government. Up to the end of 1947, 80 of these dwellings had been constructed, and a further 116 were scheduled to be begun in 1948.

During the war and for a period afterwards, for a variety of reasons (principally large military constructional works, increase in the strength

6:Gt. Brit., Colonial Office G-3 (1947) 1949 MM1 Aden MM1

in the history of the Prison. The daily average for the month was 434. This imposed a great strain on the prison resources in accommodation, equipment and staff.

Most of the prisoners, about 80 per cent., were from the Yemen and the Protectorate, the rest being local men.

Juvenile convicts under the age of 15 were as far as possible kept apart from the adults and were provided with separate sleeping accommodation. Sixty-four juvenile convicts were admitted during the year compared with 73 in 1946. They do not form a serious problem, so far as the prison is concerned, for at any one time there are not more than 3 or 4 of them.

Cane work, both new and repairs, of various types, shoe-repairing, sports-net making, re-stringing of tennis racquets, and gardening were taught to some of the long-term prisoners.

The health of the prisoners was good on the whole, there being no outbreak of any serious illness. The sickness rate was, however, higher than in 1946. The main prevailing diseases were scabies, dermatitis, ulcers, influenza, venereal diseases and malaria—the last two being contracted before admission to the Prison.

A Medical Officer from the Civil Hospital attends the Prison Dispensary every morning and gives necessary treatment to the sick. Those needing in-patient treatment are admitted into the Civil Hospital.

There were no deaths during the year.

There is no system of probation or of welfare for discharged prisoners in Aden at present, but the matter will receive the attention of Government as soon as a Welfare Officer is appointed.

Chapter 10: Public Utilities and Public Works

Both the waterworks and the electricity supply to the Colony are publicly owned and form part of the Public Works Department. A brief description of each is given below.

WATERWORKS

Prior to 1928 the domestic water supply of Aden was almost wholly derived from condensed sea water. From 1924 to 1928 experimental boreholes were sunk at Sheikh Othman and potable water was found in two thin layers of sand and gravel at 136 and 208 feet respectively below the surface.

Since that date 10 additional boreholes (including one in 1947) have been sunk and pumping plant installed, and the table on page 44 shows the increase in the consumption of water over the years:

6: Gt. Brit. . Colonial Office G-3 (1948) 1950 MM1 Aden M M1

743 X-ray examinations were performed. In previous years the annual figures for such work were in the neighbourhood of 500.

The encouraging aspect of the Civil Hospital's activities was the marked rise in female out-patient attendances, 7,447 as compared with 5,573 in 1947.

[759] The creation of the temporary post of Sister-Tutor resulted in regular training courses for the subordinate nursing staff.

The opening of a new temporary ward for male T.B. patients has increased the number of male beds from 21 to 55.

Communicable Diseases

164 *Smallpox.* There were two imported cases landed from ships. No
744 case of the other Convention diseases occurred.

Malaria. There was a sharp rise in the number of cases reported from the outlying town of Sheikh Othman. In view of this a combined search by the staff of the Public Health Department, of No. 7 R.A.F. Hospital and of the Keith Falconer Mission Hospital was instituted in that area. No evidence at all was found of anopheline breeding and it was obvious that the infection had been contracted, at any rate in the great majority of cases, outside the boundaries of the Colony.

Venereal Diseases. There was a considerable increase in the notification figures for 1948 following a drive to ensure that medical practitioners notified cases as required by the Venereal Diseases Amendment Ordinance, 1947.

The subvention to the Keith Falconer Mission Hospital for its Venereal Disease Treatment Centre was increased from £225 to £750 in order to assist the campaign against venereal disease.

A gratifying aspect of the work of the Venereal Diseases Officer was the large decrease in the number of defaulters, particularly in respect of syphilis. Hitherto the defaulting rate has been over 50 per cent. The figures for the Venereal Disease Treatment Centre in 1948 are:

	Number treated	*Number cured (clinically)*	*Defaulters*
Syphilis	1,992	1,957	35
Gonorrhoea	1,126	1,007	119
Chancroid	206	206	—
Other V.D. including Granuloma Inguinale	177	174	3

Dysentery and Typhoid. Figures for dysentery are not yet available but no untoward outbreak has occurred. The returns for typhoid and paratyphoid showed 15 cases notified, exactly the same figures as in 1947. Whereas in 1947 in seven of these cases the infection was contracted, as far as could be ascertained, in Aden, during 1948 only one case was of local origin, the remaining 14 cases were from outside the Colony.

744 *Pulmonary Tuberculosis.* The year has been marked by considerable
743 progress in the anti-tuberculosis campaign due to the full-time services

6:Gt. Brit., Colonial Office G-3 (1948) 1950 MM1 Aden MM1

of the X-ray department, an increase in hospital beds and additional staff provided by the Aden Society for the Prevention of Tuberculosis—one full time T.B. Inspector and one voluntary home visitor.

The new male T.B. Ward, the provision of 17 beds in the Jewish Emergency Hospital and the increase of beds in the T.B. Hospital, Sheikh Othman, mean that there are 100 beds for pulmonary tuberculosis patients compared with 10 in 1944.

X-ray examinations, screening or film, totalled 2,160 compared with 20 in 1944. By the end of the year another 100 cases were being treated in their own homes as compared with none in 1944. While the total of notified cases rose to 481 for the year, only 159 of these were Aden born residents. In 1944 no notifications were entered and in 1947 the number was 282.

The results of treatment continued to be satisfactory, over 40 cases being discharged during the year as fit to resume work.

The most notable advance was in the introduction of regulations whereby Government employees contracting pulmonary tuberculosis in the course of their duties were granted full-pay leave if it was considered by a Medical Board that they would benefit sufficiently from such treatment to return to work. The result has been that cases have come up for investigation at an early stage as they knew that they would receive pay throughout their course of treatment.

Of 18 Government employees so entitled, seven have been treated and resumed work, 10 are under treatment and making good progress, one has not improved. There were also two cases who elected to take gratuities and return to Somaliland Protectorate. Both have since got much worse.

These figures show that the standard of recovery is high and it is further proved by the following small but interesting figures. Since 1945 four male and two female nurses contracted pulmonary tuberculosis, of these two were sputum negative; of these cases, five are now back on full nursing duties, and the sixth case was on the point of being discharged as sufficiently well to resume work, when he had a severe mental breakdown and had to be medically boarded on this account.

Deaths from T.B. were 209 as compared with 244 in 1947.

Maternity and Child Welfare

The Maternity and Child Welfare Clinic has shown a welcome increase in attendances by the Arab community. All other communities have taken full advantage of its facilities during the last two years but Arab women have hitherto been held back by old-fashioned ideas. This prejudice is beginning to break down and this is proof that the excellent work done by this institution is now being recognised more adequately.

A gratifying addition to the already heavy routine duties of the Medical Officer and her staff of midwives was the voluntary undertaking of a course of training for local midwives, all of whom are quite untrained.

The course proved very popular and the average attendance was 31, which includes a considerable proportion of the women known to be earning their livelihood by undertaking midwifery work.

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden MM1

875 204 The monthly teachers' journal completed its third year and was well run by a small committee of teachers. Its popularity is such that it was increased in size to eight pages, and a considerable number were sold to the public. It contains departmental and professional news, articles and world news.

875 No complaint in general could be made about the enthusiasm of teachers; there was a much better corporate feeling and a growing sense of professional prestige, but their cultural background remains poor.

Weekly meetings of all women teachers were held during the cooler months. Talks on general education were given by the Principal of the Government Secondary School, and lectures in method and games by the Egyptian teachers.

Building

653 871 Considerable progress has been made with the school buildings foreshadowed in the five-year Development Plan. Work has already begun on the Aden College and the Technical College has been completed. It is hoped that the former will be opened early in 1952 and the latter accepted students early in 1951. Two further girls' schools and a boys' school have been built in Crater and the boys' school at Maalla has been doubled in size. Extensions have been made to three other schools. As a result of these developments there are now 4,000 places available in Government schools compared with 2,000 in 1947.

Technical Education

874 This continued satisfactorily on the lines drawn up by the Principal-Designate of the Technical College, and two Arabs who had been on two-year technical scholarships in England returned in 1950 and assisted in the implementation of the new syllabuses of handwork and art.

Adult Education

873 Evening classes for women and girls were unfortunately not given during 1949-50 owing to shortage of Egyptian staff. Normally dressmaking, knitting, embroidery and Arabic are taught. Classes should be resumed shortly.

Weekly talks were given at the British Institute. A privately-run commercial school provided evening instruction in commercial subjects and in English, but the British Institute ceased to hold classes.

Parents' Committee

871 Meetings of this committee were held every six weeks and many points of great value and interest were discussed. It continued to be a most useful contact between the officers of the Department and the public.

HEALTH

164 A steady improvement in the general state of the public health was revealed by the continued, in some cases marked, decline in the various health indices such as the death rate, infant mortality rate and the T.B. death rate.

7: Gt. Brit., Colonial Office G-3 (1948-50) 1951 MM1 Aden mm1

On an estimated basis of 100,000 population the death rate for 1949 was 16·58 per 1,000, but of the 1,658 deaths 376 occurred among immigrants, as Aden receives many sick from adjoining territories where no health services exist. 165

The Civil Hospital is the only well-equipped hospital in a large area and among both out-patients and in-patients an analysis of attendances shows that 60 per cent of those seeking treatment come from outside the Colony, the major portion being alien Yemenis who have no claim either by residence or by nationality on the social services of Aden. Their only claim is on the score of humanity, a plea which is difficult to resist for many of them have dragged themselves along for distances varying from 150 to as much as 500 miles to obtain care and attention in Aden. 743 167

The various departments of the Civil Hospital showed evidence of increased activity. On the surgical side major operations exceeded 1,000, the average for previous years having been between 400 and 500. 743

Operations for diseases peculiar to women were performed by a woman medical officer. This was the first time that the services of a skilled woman surgeon were available and this innovation was particularly welcome in a territory where Muslim tradition precludes a number of women from seeking surgical treatment at the hands of male doctors. [759]

Other improvements included the establishment of a physiotherapy department and the purchase of a wide range of modern equipment for the eye department.

The opening of another ward for pulmonary tuberculosis resulted in one-third of the beds in the Civil Hospital being allocated for the treatment of this disease. The T.B. Ward at Sheikh Othman was abandoned. Plans for another ward for female T.B. patients, the gift of the Aden Society for the Prevention of Tuberculosis, were approved and its construction was begun.

During this two-year period about 42,000 Yemenite Jews passed through the transit camp on their way to Israel. While the bulk of the camp staff were recruited from Israel, the responsibility for camp sanitation and for providing specialist medical and surgical services fell on the Medical Department. 744 167

Communicable Diseases

Smallpox. Despite the importation of a number of smallpox cases and the occurrence of a smallpox epidemic in the neighbouring port of Mukalla, the disease did not spread. 164 ●

There were two imported cases of typhus, one by sea and one by land.

Venereal Diseases. The campaign against the social diseases made steady progress while the marked reduction in the number of defaulters reported in 1948 was well maintained.

Dysentery and typhoid. The incidence of dysentery, both bacillary and amoebic but particularly the latter, showed a marked falling-off.

7: Gt. Brit., Colonial Office G-3 (1949-50) 1951 MM1 Aden MM1

164 An important factor influencing this reduction has been the intensification of the methods of fly control.

No outbreak of typhoid occurred, all notified cases were sporadic in origin and a number of them were among recent arrivals from the interior.

Pulmonary Tuberculosis. In 1950 the total deaths from this disease amounted to 113 compared with 293 per 100,000 of population in the period 1930-44. The decrease is directly attributable to the measures taken since 1945. These include the provision of more beds—there is now one bed for each T.B. death as compared with one bed for 25 deaths in 1944; domicilary care for cases for whom no hospital accommodation could be provided ; and financial aid by the Aden Society for the Prevention of Tuberculosis to the dependants of those undergoing treatment either in hospital or at home.

The results of treatment have been encouraging, about 70 per cent of those treated in hospital have recovered sufficiently to return to work. [657] From 1948 to 1950 there were 58 Government employees admitted to hospital under the regulations granting 12 months' full-pay sick leave to T.B. sufferers. It is estimated that 80 per cent of those have resumed, or will be fit to resume, work following treatment.

Notifications of pulmonary T.B. reached the record figure of 530 in 1950. This rise was due to the ever increasing numbers of those who came to Aden from other countries attracted by the news of successful treatment. As far as the Aden born population was concerned the cases notified in 1950 showed a definite decrease as compared with 1949.

Malaria

The Colony remained completely free from malaria and the vigorous anti-mosquito campaign reduced the number of breeding places of domestic mosquitoes to the record low figure of one detected breeding place in every 5,000 houses and surroundings inspected.

165 *Maternity and Child Welfare*

For the first time in six years the infant mortality rate for 1949 showed a definite fall as opposed to a small but steady rise since 1946. Preliminary figures for 1950 show there has been a further decrease bringing the infantile mortality rate down to around 140 ; in 1944 it was 187.

748 Another advance has been the recruitment of four Home Visitors
758 to go into the homes and teach the mothers the elementary principles of infant care. Three of the Home Visitors are Muslim women and it is an achievment to have persuaded them to break with tradition and undertake outdoor work.

743 Not only have the attendances at the Maternity and Child Welfare
758 Clinic shown large increases, but the proportion of Arabian women and children reached 60 per cent of total attendances as compared with 25 per cent in 1944.

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden MM1

658 Technical College in November, 1951, the only remaining capital project was the Intermediate School for Girls.

Health

Although a special medical officer for schools was not appointed the amount of medical and dental attention was increased. The system of school dressers and of attendance at hospital was improved. There was no epidemic during the year. The supply of school milk was extended to the full three terms instead of, as previously, two terms.

HEALTH

General

164 744 Although the port is astride the main sea route between the Indian Ocean and the Mediterranean Sea it has remained conspicuously free from any of the Convention diseases. Plague, cholera, smallpox, yellow fever and typhus did not occur in the Colony during 1951–52—indeed they have not occurred as endemic diseases for a number of years. Many ships and dhows of many nationalities reach the port in transit to other parts of the world, but vigilance by the Port Health Authorities and the Public Health Department combined with growing appreciation of the value of the International Sanitary Control measures have ensured the continued absence of epidemic diseases. During the latter part of 1952 influenza was imported from Europe and elsewhere, and caused the sickness rate to rise. Fortunately this disease did not increase the mortality rate.

From an epidemiological point of view the hinterland of Aden presents greater problems than do the sea and airborne traffic except, probably, the importation of influenza which is more likely to arrive by sea and air than from the interior.

An outbreak of plague in the Yemen in 1951 was countered in Aden by dusting immigrants from the Yemen with 10 per cent D.D.T. at the Police posts on the outskirts of the Colony, and anti-rat measures were intensified.

364 The state of environmental hygiene and sanitation continued to be fairly satisfactory, there being a marked absence of flies and mosquitoes. Sanitation in certain areas still requires attention and this is being examined with a view to providing better housing conditions.

Maternity and Child Welfare

165 The infant mortality rate has shown a steady decline over the last 10 years. In 1951 the crude rate was 156.96 per 1,000 live births, in 1952 it was 139.92 per 1,000. As a comparison it may be mentioned that in 1943 the crude rate was 238.97 per 1,000. Increased attention has been given to the maternity and child welfare aspects of the Medical Department's work and during April, 1952, a new block of wards was in the process of being added to the existing Maternity and Child Welfare Hospital and Clinic. In order to expand the influence of maternity and child welfare work in homes four Home Visitors were engaged. These Visitors have proved invaluable; they were recruited

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden MM1

from local Arab women who observed purdah and were, therefore, able to gain easy access to the homes of others who also observed the purdah system.

The maternrl mortality rate fell from 3.07 per 1,000 live and still-births in 1951 to 2.23 per 1,000 in 1952.

Diseases

Diseases attributable to water-borne infection were entirely absent because the water supply is protected and chlorinated. The cases of enteric fever or dysentery which do occur are of a sporadic nature, many of them having been infected outside the Colony.

The death rate from pulmonary tuberculosis showed a steady decline over previous years. In 1950 the death rate was recorded as 113 per 100,000 of the population ; in 1951 100 per 100,000 ; in 1952 84 per 100,000. During 1952 the World Health Organisation sent an international team, comprising one medical officer and one nurse, to carry out tuberculin testing of the local population below the age of 18 and to inoculate all non-reactors with B.C.G. vaccine. The team stayed in Aden for four months and tested approximately 31,000 people, of whom 7,750 non-reactors were vaccinated, approximately 14,000 were positive reactors and 8,000 or so persons failed to reappear for inspection. It is hoped to follow this visit up by asking the World Health Organisation to undertake a tuberculosis survey of the Colony.

The Colony remained free from malaria and the Aedes index fell to the lowest yet recorded figure of 0.007.

The principal causes of mortality in 1951 were :

Diarrhoea and enteritis	304
Other fevers	266
Senility	171
Pneumonia and broncho-pneumonia	147
Tuberculosis of the respiratory system	100
Congenital malformations and diseases peculiar to first year of life	94
Diseases of the heart	62
Violent or accidental deaths	66
Other diseases of the respiratory system	48

Modern treatment for these diseases is given by the Civil Hospital (350 beds) and the Church of Scotland Mission (80 beds) and, when required, generous assistance is provided by the R.A.F. medical officers stationed in Aden, both in consultative and specialist capacities. Steps have been taken to introduce the international statistical classification of diseases, injuries and causes of death so that closer comparison can be made with other countries.

Prevention of the diseases listed above follows the usually accepted procedures but special emphasis is placed on a purified water supply, high standard of sanitation and the necessity for legislation to control itinerant vendors of foodstuffs. Milk, either goat's or cow's, is usually boiled before use and does not constitute a grave danger in the spread of disease.

shafts lead from lavatories in the upper stories to a reception chamber on the ground floor, is widely used in the larger houses in Western Aden Protectorate and the Hadhramaut. Pit or surface privies are sometimes found in the courtyards of the smaller houses, but the majority have no facilities for the disposal of sewage wastes. Indiscriminate pollution of the soil is a general practice.

Fauna and Flora

Few entomologic surveys have been made in this region, and data regarding the insect vectors and animal hosts of human disease are fragmentary. It is probable, however, that the species identified in the neighboring territories are present in Aden Protectorate under similar physiogeographic conditions.

Arthropods. Mosquitoes. *Anopheles adenensis* (— *A. culicifacies adenensis*) is the most important anopheline mosquito in Aden Colony. Although it has been eradicated from Aden and Sheikh Othman townships, it persists in near-by oases, and is a major vector of malaria wherever it is encountered. In the last local outbreak in the *kutcha* hut district of Sheikh Othman, *A. adenensis* was found breeding in large numbers in the soakpits. It normally breeds in wells, shallow cisterns, irrigation canals and sluggish streams, and, before the institution of effective control measures, had become adapted to the high salinity of the saltpan seepages.

A. gambiae is widely distributed in the Protectorate, where it probably acts as the principal vector of malaria. It breeds along the edges of pools and streams, in irrigation canals, in wells and in numerous other collections of water. *A. turkhudi, A. coustani, A. ethali, A. pretoriensis* and *A. barbirostris* have also been reported from various localities.

Aedes aegypti, the usual urban vector of yellow fever elsewhere, and *A. vittatus*, a tree-hole breeder implicated in the transmission of yellow fever in endemic foci in

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They are potential vectors of plague, but no cases have been recorded for several decades. The human flea, *Pulex irritans*, is common and has been suspected of transmitting plague from man to man in past outbreaks. Species of *Ctenocephalides* undoubtedly occur, as in the adjacent territories.

TICKS AND MITES. Several species of ticks infest both wild and domestic animals in the rural areas. The human itch mite, *Sarcoptes scabiei*, is unusual among the schoolchildren in the Colony, although it is widespread in the poor communities in Yemen and the Protectorate.

Reptiles. The puff adder, *Bitis arietans*, inhabits some portions of the western highlands. The carpet viper, *Echis coloratus*, and the sand vipers, *Aspis cerastes* (— *Cerastes cornutus*) and *A. vipera* (— *C. vipera*), are described from southern Arabia, but their prevalance within Aden territory is uncertain.

Rodents. *Rattus rattus rattus* and *R. rattus alexandrinus* are widely distributed. At least 90 to 95 per cent of the rats captured in the Colony have been identified as *R. rattus*. In spite of the diversity of shipping activities, *R. norvegicus* is seldom encountered. Active measures for the destruction of rodents in the bazaars and the dwellings in the towns and on the dhows visiting the port are carried on by the Colonial health authorities. No controls are exercised over the larger vessels, which have to anchor in the harbor. A representative proportion of the captured rodents are examined annually for evidence of plague.

Wild rodents are common, including species of *Meriones*, *Jaculus* and *Gerbillus*.

Molluska. Foci of *Schistosoma haematobium* and *S. mansoni* infection exist in Western Aden Protectorate, but the intermediate snail hosts have not been positively identified. Planorbis and Bulinus snails have been reported from Mukeiras and Museimir, and Bulinus from the Dhala' plateau. *Melanoides tuberculata* and other species are found in several areas.

83:Simmons et al G-5 (1941-1951) 1964
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Colonial government. Five physicians were working in the eastern protectorate; one in the western.

Dentists. In 1950, there were 3 dentists in Aden, one of whom was employed on the government's school health program.

DISEASES

The statistics compiled from the reports of cases of illness and death in the Colony are apt to give an erroneous impression of the health status of the local inhabitants, since a considerable proportion of the cases treated in hospitals and dispensaries are immigrants from Yemen or the Protectorate. Large numbers enter the Colony each year as transient laborers or traders, while others seek medical attention which is nonexistent in their home communities. The majority are undernourished and live in miserable, crowded quarters under conditions which facilitate the spread of infection. Morbidity and fatality rates in the immigrant population are abnormally high, and affect adversely the health statistics of the Colony as a whole. In the absence of adequate laboratory facilities, the diagnosis of many diseases is necessarily provisional, and the differentiation of various types of infection is seldom made. Moreover, from 10 to 15 per cent of the deaths are usually recorded under the heading "other fevers."

The health facilities in the Protectorate are of recent origin, and although dispensaries have been established in increasing numbers within the last two decades, they are elementary and serve only a small fraction of the population. The meager information derived from the reports of a few medical observers who have toured sections of the interior and from records of admissions to the hospitals in Aden permits scarcely more than rough generalizations as to the prevalence and the distribution of specific diseases among the peoples of the Protectorate. The diseases of primary concern in this area are malaria, tuberculosis, dysentery and eye and skin infections, all

82.Simmons et al G-8 (1943-1981) 1964
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of which are almost invariably associated with widespread undernutrition.

Diseases Spread or Contracted Chiefly Through Intestinal or Urinary Tract

Typhoid and Paratyphoid Fevers. Typhoid fever is sporadic, and 10 to 35 cases are reported from the Colony each year. Over one half of the known cases occur usually among nonresident laborers. Paratyphoid fevers are grouped with typhoid in the morbidity statistics. The rate of infection is not known, but both paratyphoid A and paratyphoid B fevers are undoubtedly present. Typhoid fever is apparently endemic in the Protectorate, although recognized cases are reputedly rare in the Hadhramaut.

Dysenteries. Dystentery is prevalent throughout this region, where the unhygienic habits of the people and the abundance of flies promote the spread of intestinal infections. From 500 to 1,300 cases are treated annually in the civilian hospitals and dispensaries in the Colony. Amebic dysentery predominates among the few cases in which the differential diagnosis is established, but a large proportion of the remainder are probably bacillary infections. Of the 589 cases recorded in 1949, 1 was diagnosed as bacillary dysentery and 48 as amebic, while 540 were unclassified. The percentage of carriers of *Endamoeba histolytica* is believed to be high: it has been estimated at 40 to 50 per cent among immigrants from Yemen, many of whom are engaged in the handling of foodstuffs in the Colony.

Amebic and bacillary dysentery, as well as diarrhea and enteritis, are grouped together as "dysentery" in the official statistics. In each of the 5 years 1946-50, the dysentery deaths numbered 334 to 406, or approximately 20 to 25 per cent of the recorded mortality in the Colony. Among the 393 deaths reported in 1950 as due to dysentery, 107 were among the immigrant population. The younger age groups are most seriously affected, and the local au-

A 165 167 854 146 thorities regard undernutrition and incorrect methods of feeding as important underlying factors. The deaths in infants under 1 year of age totaled 175 in 1950, or about 44 per cent of the known dysentery deaths.

H 164 No precise information is available regarding bacillary and amebic dysentery in the Protectorate, but the high rate of infection among visitors to Aden Colony suggests that both are widespread.

A 164 361 744 Cholera. Cholera has not been reported from Aden within the present century, although outbreaks have followed its introduction in the past. Since no record exists of its presence in the Hadhramaut, it is probable that the disease was largely confined to the port towns.

During the 1947 outbreak in Egypt, traffic through Aden was increased due to the quarantine restrictions imposed on Egyptian ports. Special precautions were taken by the health authorities to prevent the admission of infected individuals or goods by sea, land or air routes. Immunization against cholera was also provided for all persons handling shipping and for all health service personnel.

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H 164 Helminthiases. SCHISTOSOMIASIS. Schistosomiasis is endemic in scattered localities in Western Aden Protectorate, especially in the highland districts above 2,000 feet elevation. Foci of *Schistosoma haematobium* are known to exist in the Jebel Jehaf and Dhala' plateau country, in the Wadi Tiban area around Museimir, and in the vicinity of Tor am Baha, Huwemi and Khor 'Umeira. *S. mansoni* is apparently more restricted in distribution, but it is found in the Jebel Jehaf and the Wadi Tiban regions.

A 164 No locally acquired infections are reported from the Colony, although numerous cases among persons from the interior are treated in the civilian hospitals each year. A large proportion of the cases seen in Aden Colony come from Yemen or from the Dhala' and the Museimir districts.

H A 136 The intermediate snail hosts of *S. haematobium* and *S. mansoni* have not been definitely established, but Bulinus and Planor-

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bis snails have been described from some of the affected foci.

ANCYLOSTOMIASIS. Hookworm infection occurs in Lahej and a few agricultural centers in Western Aden Protectorate. *Necator americanus* has been identified in the cases treated at the Civil Hospital in Aden.[20]

OTHER HELMINTH INFECTIONS. Infections with one or more types of intestinal worms are prevalent, particularly among the peoples of the Protectorate. Ascariasis is widespread. Trichuriasis and, to a lesser extent, enterobiasis are common. Hydatid disease is reported among individuals from the Colony and from the interior. Infection with the beef tapeworm, *Taenia saginata*, is enzootic among the cattle in the tribal districts, and human infections are undoubtedly frequent. Cases are occasionally encountered among immigrant families in the Colony. The pork tapeworm, *T. solium*, is rare, but infections are sometimes seen in the Aden hospitals.

Other Infections. *Brucella melitensis* is enzootic among the goats in this area, and Malta fever is diagnosed from time to time in the Colony hospitals and dispensaries.

DISEASES SPREAD CHIEFLY THROUGH THE RESPIRATORY TRACT

Tuberculosis. Tuberculosis is one of the most prominent diseases affecting the inhabitants of southern Arabia, but no precise information is available, except for Aden Colony. The high degree of undernutrition and overcrowding, and the low standards of personal hygiene and sanitation prevailing among large sections of the population, favor the spread of the infection. The disease is probably prevalent among the women who are confined to close quarters by the *purdah* system and among the young children in close contact with them. In a small tuberculin test survey covering 95 Aden township schoolboys of 7 to 12 years of age, in 1945,[2] positive reactions were obtained in 56 per cent—a rate which ranks high among those usually found in

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urban communities in the Middle East. Pulmonary infections predominate, but other forms of the disease are also observed.

Tuberculosis is widespread in the immigrant populations in Aden, as shown by the fact that 58 to 70 per cent of the cases of pulmonary tuberculosis recorded in the three years 1948-50 were in nonresidents. Among the 530 cases reported in 1950, Aden was the place of origin in 152, Yemen in 193, Western Aden Protectorate in 99, Eastern Aden Protectorate in 12, and Somaliland, India and other countries in the remainder. In the decade 1941-50, the number of deaths attributed to pulmonary tuberculosis ranged from 113 to 261 a year, with peaks of prevalance associated with large migrations of immigrants.

Although tuberculosis has long been regarded as a major cause of sickness and death in the Colony, few facilities for diagnosis and treatment existed before 1945. In that year, the health authorities initiated a campaign for the reduction of tuberculosis in all ecopomic groups of the population. The diagnostic services were reorganized and X-ray equipment provided. Special wards were also added to the civilian hospitals; the number of beds available for the treatment of tuberculosis was increased from 18 in 1945 to 150 in 1951. As a further preventive measure, a program of supervised domiciliary treatment was introduced in 1947 to furnish care to persons who could not be hospitalized.

Following the organization of the anti-tuberculosis campaign, there was a decrease in the specific death rates from around 29.3 per 10,000 population in the period 1931-44 to 11.3 in 1950. In the latter year, the corrected rate for the local population alone was 8.4 per 10,000. A tuberculin testing and BCG inoculation program was planned for 1952 by the Medical and Health Department, in co-operation with the World Health Organization.

Smallpox. In spite of the fact that localized epidemics of smallpox are recurrent in the Protectorate, no outbreaks have been

reported from the Colony of Aden since 1929. A few cases are treated almost every year in the Colony hospitals, but, with rare exceptions, they have occurred among immigrant families or among persons arriving from other ports. Vaccination against smallpox is compulsory for all residents of the Colony. In addition, intensive revaccination campaigns are undertaken by the health authorities whenever cases are discovered, or when outbreaks are reported from adjacent areas, as at the time of the epidemic in Mukalla in 1949. Although visitors to the Colony are required to possess valid certificates of vaccination, enforcement is sometimes difficult because of the large numbers of dhows and other small vessels which ply between Aden and Indian or African ports. Vaccination posts are established along the land frontiers on caravan routes from Yemen and Western Aden Protectorate, at which immigrants are examined, and, if necessary, vaccinated.

Other Infections. Pneumonia is widespread, ranking among the leading causes of death in both the Colony and the Protectorate. The fatality rate among the immigrant community in the Colony is unusually high, since many of the individuals who flock to the port in search of work or medical attention arrive in a debilitated condition. Sporadic cases of diphtheria are reported each year from the Colony. Chickenpox, measles, mumps and poliomyelitis are endemic. Localized outbreaks of meningococcus meningitis are recorded occasionally.

Diseases Spread or Contracted Chiefly Through Contact

Venereal Diseases. All forms of venereal diseases are observed among the civilian populations in Aden Colony. Syphilis and gonorrhea are reportable, but the statistics probably fail to give a true picture of the relative frequency of the different venereal infections. In 1948 and 1949, following the inauguration of a campaign for better re-

A 164 porting, 2,018 and 2,325 cases, respectively, were recorded. Of these, 59 to 63 per cent were diagnosed as syphilis and 31 to 34 per cent as gonorrhea, while chancroid predominated in the remainder. Some indication of the prevalence of syphilis is provided by the results of serologic examinations of blood specimens taken from individuals admitted to tuberculosis wards. In a series of Kahn tests performed on 243 cases in 1950,[7] positive reactions were obtained in 13 per cent. Centers for the treatment of venereal diseases have been established at the Civil Hospital, in Aden township, and at the Keith Falconer Mission Hospital, in Sheikh Othman.

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N 164 Syphilis and gonorrhea are reputed to be common in the towns of the Protectorate, but no reliable information is available. A nonvenereal treponemal infection, believed to be bejel by most authorities, has been reported from various localities in southern Arabia. A focus probably exists around Beiham, in Western Aden Protectorate. Cases are observed from time to time in the Colony hospitals among persons from this area, as well as from Yemen.

N 164 516 **Diseases of the Eyes.** Trachoma and conjunctivitis are major problems, particularly in the Protectorate, where environmental conditions and the unhygienic customs of the people promote the spread of infectious eye diseases. Trachoma is frequent among the schoolchildren in the Colony. In a survey conducted in 1946,[8] the incidence of trachoma was found to be 18.9 per cent among 1,103 boys examined in the government schools. Measures for improved diagnosis and treatment were instituted, with an appreciable decrease in infection. In a similar group of 1,419 boys observed in 1948, evidence of trachoma was detected in 9.8 per cent.

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H 164 659 Less is known of the extent of the disease in the interior. A medical survey in Western Aden Protectorate in 1939-40[20] revealed widespread trachoma infection, with rates varying from 14 per cent in Dhubiyat to

75 per cent in Shuqra. In most localities, the infection rates ranged from 27 to 88 per cent among children under 15 years of age and from zero to 48 per cent in persons over 15 years of age. The Fadhli and the Abdali tribal districts were the most seriously affected regions visited.

Diseases of the Skin. Favus, ringworm and other mycotic skin infections are widely distributed. Madura foot is common in the Protectorate, and cases are seen in the Colony hospitals each year among patients from the interior. Phagedenic ulcers are responsible for considerable disability among laborers in the Colony and in all parts of the Protectorate. Several thousand cases are treated each year in the hospitals and the dispensaries in Aden Colony, where they are usually designated as "Yemen ulcers." The ankle is the most frequent site of infection, and amputation is often necessary in neglected cases.

Scabies and impetigo are prevalent, especially among the children of inland towns and villages who live under congested, insanitary conditions. By contrast, surprisingly few cases of scabies are encountered among the children seen in the schools in Aden township.

Leprosy. Leprosy is endemic in the Protectorate, but no indigenous cases have been reported from the Colony within recent years. The infection is probably not extensive, although foci of the disease are known to exist in the Hadhramaut and in the Lahej, the Dhala' and the Abyen areas in the western protectorate. As lepers are not discriminated against socially, some difficulty is encountered in controlling the movement of infected individuals in the Colony. A small leper hospital is located at Sheikh Othman: it receives patients not only from Aden territory but also from Yemen. Eighteen of the 29 patients in residence in 1939[18] were open nodular or lepromatous cases.

Other Infections. Tetanus is endemic, but reported cases are rare.

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Diseases Spread by Arthropods

Malaria. Little or no indigenous malaria exists at present in the Colony. From 1,000 to 2,000 malaria patients are treated each year in the civilian hospitals and dispensaries, but, with the exception of occasional cases of questionable origin, the infection has almost invariably been acquired outside the limits of the Colony, usually in the interior. Until recent decades, malaria was highly endemic in the oasis of Sheikh Othman and surrounding villages, and sporadic outbreaks were experienced in the town of Aden. Anopheline control work was initiated in 1909 and extended on a colony-wide basis in the 1930s. As a result, the disease was early eliminated from Aden, while its prevalence was progressively reduced in Sheikh Othman. The number of local cases treated at the Keith Falconer Mission Hospital declined from almost 2,000 a year in 1907 to zero in 1950. The last outbreak of malaria was recorded in 1943 among the transient laborers living in *kutcha* hut settlements in Sheikh Othman. At that time, *Anopheles adenensis* (= *A. culicifacies adenensis*), the principal vector, was found breeding in the soakpits. Antianopheline measures are carried on continuously in the Colony and adjacent sections of the Protectorate, and vector species have been eradicated almost completely.

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Malaria occurs in most portions of the Protectorate, exclusive of the desert regions and the mountainous areas at the higher elevations. In the 1939-40 survey of Western Aden Protectorate, all gradations of endemicity were encountered. In general, the infection was hyperendemic in the vicinity of perennial streams and moderately endemic in villages around wadies which remained dry for most of the year. The splenic index ranged from 40 to 92 per cent in different localities. Extensive epidemics have been recorded from the highland districts, especially from the Dhala' and the Yafa'i country. Both *Plasmodium falcip-*

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H 164 136 arum and *P. vivax* are found in most regions, but *P. malariae* is apparently relatively rare. *A. gambiae* is widely distributed, and is regarded as the principal vector in the Protectorate.

H R 164 Rickettsial Infections. Louse-borne typhus has been recognized in the highlands of southwestern Arabia since 1939, and occasional imported cases are admitted to hospitals in the Colony. In 1944-45, epidemics of typhus were recorded from Western Aden Protectorate which were secondary A 164 167 744 to foci in Yemen. The disease first appeared in Aden in January, 1944, among Jewish emigrants who had traveled overland from Yemen and were awaiting transport to Israel. Fifteen cases were reported, all but 2 of which were members of the Jewish community. The movement of Yemenis across the frontiers was restricted, and a camp at Labej which at that time harbored some 1,600 Jewish emigrants was transferred to a quarantine site in the desert. A 167 758 744 Sick individuals from the Jewish quarters in the town were removed to the camp, and wholesale delousing measures were enforced both at the camp and in infected areas in the town. The spread of the infection in the Colony was curtailed, but new outbreaks developed in the Amiri and the Subeihi tribal districts, near the Yemeni border, and progressed along the trade routes to within 40 miles of Aden Colony. The importance of the port and military installations during the prevailing war emergency necessitated the creation of a sanitary cordon to isolate the Colony from the interior.

A 164 744 The infection persisted in epidemic form in the Protectorate, spreading eastward to the Dhala' plateau and the mountainous villages of the Lower Yafa'i country. In many localities, 10 to 25 per cent of the inhabitants are believed to have suffered from the disease. Insecticidal powders, as well as antityphus vaccine, were supplied by the United States Typhus Commission, and mass dusting campaigns were carried on in the villages visited by the medical

A 164 744 officers. Special delousing stations were established along the 3 main trade routes from Yemen to guard against the development of new foci.

The prevalence of the infection diminished during the summer months, but sporadic outbreaks were again reported in the winter of 1944-45. H 164 743 744 Early in 1945, a series of permanent dispensaries was organized in Western Aden Protectorate, and the tribal dressers in charge were trained to undertake mass dusting of the populace with DDT powder in the event of further epidemics. No outbreaks of typhus have been reported from the Protectorate since 1945, although the disease has continued to smolder in Yemen.

A 164 Murine typhus is probably endemic. Suspected cases have been observed in Aden hospitals from time to time, but the diagnosis has not been confirmed by laboratory diagnosis.

Plague. Six outbreaks of plague have been recorded from the Colony within the present century—in 1899-1900, 1903-04, 1904-05, 1913-14, 1917-18 and 1927-28. The most serious epidemics were those of 1904-05, involving 2,299 known cases, and of A [165] 1927-28, with 1,494 cases and a fatality rate of 74 per cent. A 164 464 232 In each outbreak the initial cases were detected among dock laborers employed in moving cargo or in loading or unloading coal. Since evidence of a preliminary rat epizootic was lacking, the local authorities concluded that the disease had been introduced by infected workers or by individuals carrying infected fleas. It was A [165] considered probable that the rat infection was secondary to the human. The morbidity rates almost invariably reached a peak in February or March, and declined with the onset of hot weather. No plague has been reported from the Colony since 1928, but the danger of its importation by means of dhow traffic from endemic ports in Africa H A 744 and the East is always present. The Medical and Health Department carries on an active rat control program, and examines significant numbers of captured rats each

year for evidence of plague. The disease has not been reported from the Protectorate.

Other Infections. Localized outbreaks of louse-borne relapsing fever have been recorded from the Protectorate, but no indigenous cases have been encountered in Aden. Cases of relapsing fever were frequently discovered at the time of the typhus outbreaks in 1944-45.

Occasional cases of kala-azar are seen in the Colony hospitals, usually among immigrants from Yemen. Two cases, in which the diagnosis of kala-azar was confirmed by spleen puncture, were recently reported from the Civil Hospital.[10] Both originated in southern Yemen, one from the vicinity of Ta'izz and the other from a village near the border of Western Aden Protectorate. Sporadic cases of Oriental sore are also treated in Aden, but the extent of infection in the interior is uncertain.

Cases suspected of being sandfly fever are common. The vector, *Phlebotomus papatasii*, is widely distributed. Guinea worm infection is endemic in the Hadhramaut and in certain coastal districts in the Protectorate. Imported cases are often observed in Aden Colony. Travelers from endemic centers in Africa thought to be suffering from yellow fever are sometimes admitted to the Colony hospitals, but no indigenous cases have been reported.

Nutritional Diseases

Undernutrition is prevalent, particularly among the immigrant laborers in Aden and the poorer villagers and the Bedouin in the interior. Few studies of the prevalence of nutritional diseases have been made, but, in view of the inadequate diet of large sections of the population, deficiency conditions are probably numerous, particularly as regards protein and vitamins C, A and riboflavin of the B complex. Rickets is common in the Protectorate, while minor symptoms of the disease were detected in 17 per cent of 264 schoolchildren examined in Aden township in 1945. Spongy gums, gingivitis and other signs of vitamin C de-

ficiency are widespread. Pellagroid lesions of the skin are often encountered among the peoples of the Protectorate. In a survey of 518 Arab schoolboys in Aden township in 1949, no cases of overt deficiency were found, but enlargement of the liver, possibly suggestive of low protein intake, was revealed in 27 per cent.

Miscellaneous Conditions

A small outbreak of epidemic muscular rheumatism, classified as Bornholm disease, was reported from Aden in 1946. It involved 35 persons—34 British and 1 Arab.

Hepatic cirrhosis is one of the most frequent conditions seen at the Civil Hospital. Local physicians have noted that most of the cases come from malarious regions where qat is widely used, but the underlying causes have not been investigated.

Chewing the leaves of *Catha edulis*, or qat, is a general custom in Western Aden Protectorate. The leaf juices contain a stimulant, and habitual indulgence is said to produce loss of appetite, sleeplessness and a variety of more serious nervous disorders. Local observers believe that addiction to the drug contributes to the widespread undernutrition among the people.

SUMMARY

The Colony of Aden and the adjacent Protectorate, on the southern coast of Arabia, have been British dependencies for over a century. The population of the Colony, including the port of Aden, was enumerated at 80,516 in the census of 1946, and calculated at over 100,000 in 1950. The Protectorate territory comprises two administrative divisions—Western Aden Protectorate and Eastern Aden Protectorate, in which the estimated population for 1948 was about 350,000 and 300,000, respectively. The local governments are tribal and diverse in organization, ranging from sultanates to smaller autonomous units. The inhabitants of both the Colony and the Protectorate are predominantly Arabs and adherents of Islam.

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180 A H 146 the Colony. Undernutrition and avitaminosis are widespread, but the prevalence of specific nutritional deficiencies is not accurately known.

A ● 164 Dysentery, tuberculosis, trachoma and malaria are the most prominent disease problems, although indigenous malaria has now been largely eradicated from the Colony. Smallpox is frequently epidemic in the interior, but vaccination is compulsory in the Colony, and no outbreaks of local origin have been recorded since 1929. Serious epidemics of louse-borne typhus have occurred within recent years in the Western Aden Protectorate. Skin diseases, pneumonia, helminthiases and venereal infections are prevalent and widely distributed. Typhoid fever, measles and other respiratory diseases of childhood, and probably murine typhus and sandfly fever, are endemic. Leprosy, schistosomiasis and louse-borne relapsing fever exist in certain localized areas. Diphtheria, meningococcus meningitis and poliomyelitis are sporadic in the Colony and probably in the Protectorate. The last outbreak of plague in the Colony was recorded in 1928, while cholera has not been present within this century. Cases of kala-azar, Oriental sore, hookworm and guinea worm infection are occasionaly admitted to the Colony hospitals among individuals from the Protectorate or Yemen.

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